Technical Brief 1 RAPID ASSESSMENT OF HEALTH SERVICES CAPACITY IN THE WEST BANK

PALESTINIAN HEALTH CAPACITY PROJECT

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INTRODUCTION

The purpose of this report is to present an initial analysis of information collected to support the reform of the referral processes in West Bank/Gaza (WB/G). The Palestinian Health Capacity Project (PHCP) has collected and analyzed data between January and February 2014 that relate to three aspects of referrals:

- 1. The cost and number of referrals being made from secondary to tertiary care across WB/G
- 2. Distortions in referrals that result in higher costs for referrals to Israeli hospitals
- 3. The current capacity of referral hospitals in WB/G to treat more of the cases that are currently referred to Israeli hospitals.

As the third aspect indicates, one potential strategy that would reduce the cost of referrals to Israel would be to increase the number of services provided within WB/G facilities rather than providing external referrals. This report summarizes information on the existing capacity of Palestinian hospitals to address cases currently referred outside WB/G. The report includes a descriptive analysis of the capacity of tertiary care facilities within WB/G and estimates current capacity to cope effectively with the more costly cases now referred to Israeli hospitals.

WHY REFERRALS ARE IMPORTANT

Referrals for specialized care from the Palestinian Ministry of Health (MOH) have increased steadily from 8000 cases in 2000 to almost 62,000 in 2013 (Figure 1).





Source: Ministry of Health Sector Review, April 2013 and PHCP data 2014.

Referrals to local hospitals within West Bank, Gaza, and East Jerusalem (facilities inside the Palestinian Authority or PA) remain the most common and include private hospitals and nongovernmental hospitals. Their share of total referrals is steady at around 82%, up from 77% in 2011 (Table 1). The East Jerusalem hospitals received a total of 26,783 referrals, approximately 43% of total referrals (up from 40% in 2012). Referrals to Egypt and Jordan have decreased in recent years, and referrals to Israel have increased. In 2013, 13% of referred cases went to Israeli hospitals compared to 8.4% in 2011. In February 2014, 11% of all referred cases went to Israeli hospitals, accounting for 32.3% of total referral costs (see Table 13).

TABLE 1: REFERRALS WITHIN AND OUTSIDE THE COUNTRY BY DESTINATION AND COST

		Year								
		2013		2012		2011				
Destination for treatment	% of cases	% of total cost	% of cases	% of total cost	% of cases	% of total cost				
Facilities inside PA	81.8%	66.9%	82.4%	67.6%	77.0%	53.8%				
Egypt	4.6%	2.0%	5.9%	4.4%	6.9%	3.7%				
Jordan	0.4%	0.8%	2.6%	6.6%	7.7%	21.1%				
Israel	13.2%	30.3%	9.1%	21.4%	8.4%	21.3%				

Source: MOH 2013 and PHCP data

Figure 2 below shows the facilities in West Bank and East Jerusalem that took referrals, with Augusta Victoria and Al-Makassed hospitals taking just under half of all the referrals.



FIGURE 2: REFERRALS TO WEST BANK AND EAST JERUSALEM HOSPITALS 2013

Source: MOH 2013

What is not known from current data is why the number of referrals has increased eightfold in the last 13 years. As the number of referrals has increased, so has the cost (Figure 3). The consistent upward trend is particularly concerning in a health system where referrals represent 40% of the MOH budget (World Bank 2013). While it is beyond the scope of this report to find causes for the escalating referrals, it is worth highlighting the future necessity to explore the cost-effectiveness of the referral process, from primary to tertiary care.



FIGURE 3: COST IN MILLIONS OF NIS OF ALL REFERRALS, 2008-2013

Source: MOH 2013

The growing number and cost of referrals show that significant challenges remain for the MOH in managing referrals. This is especially true for referrals to Israeli hospitals, which are disproportionately expensive. The cost of referrals to Israeli hospitals has doubled in the past year. With limited contractual arrangements with Israeli hospitals in place that detail costs of services, the costs are estimated by the MOH with a maximum committed level, yet these ceilings are frequently exceeded. Because payments for referral services provided in Israel are taken from tax revenues, they are cleared by the PA Ministry of Finance (MOF) with little time for the MOH to review and validate invoices.

As shown in Figure 4, the total deducted from PA tax revenues for referrals to Israeli hospitals was NIS 240.6m in 2013—this represents 46% of the total cost of referrals for 13% of referred cases. Part of the reason for the high cost of referrals to Israeli hospitals is that many of the referrals are for high-cost services such as oncology and bone marrow transplants. Another aspect, as noted, is the underestimation in the expected amount that the MOH has agreed to pay against the higher invoiced amount that comes to the MOF (Table 2).

Source	Total amount	Average/month
MOF actual	240,659,835	20,054,986
MOH estimated	168,717,723	14,059,810

TABLE 2: DISPARITY BETWEEN M	OF AND MO	H COSTS OF	R EFERRALS,	2013
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Source: MOF data 2013–2014

The MOH has identified weaknesses in the functioning of the referral process and has taken initial steps to rectify distortions by forming three regional referral committees, with changing membership, which will scrutinize all requests from their region for referral outside the MOH system. The central MOH unit and Deputy Minister have the final approval. The MOH expectation is that there will be a more objective process of giving permission for referrals.

The overall fiscal situation for the government is constantly uncertain, with a long history of political instability and conflict, which undermines governance and underscores the need to control costs through managing services. The MOH has attempted to contain costs and improve service delivery in recent years, introducing two National Strategic Health Plans (2014–2016 and 2011–2013) that promote public health measures (e.g., smoking cessation, road safety, cancer screening) to tackle the growing burden of noncommunicable diseases and reduce public spending on specialty referrals. The MOH with the World Bank (2010) also developed a competitive bidding process for referrals. It has been used sporadically within the local West Bank market (MOH and nongovernmental hospitals).

TOP REFERRALS TO ISRAELI HOSPITALS

The first set of assessment results summarizes our analysis of Israeli referrals, which shows the high volume and high cost of cases referred to Israel. The highest cost procedure to be referred is bone marrow transplant, while the highest volume of referrals is for oncological follow-up (Figure 5).



FIGURE 5: DISTRIBUTION OF REFERRED CASES TO ISRAELI HOSPITALS, 2013

The MOH data in Figure 5 show the classifications of causes for referrals to Israeli hospitals from West Bank and Gaza, together with the MOH estimated cost. Many of the classifications are nonspecific and may cover several procedures, such as laboratory analysis for blood and urine tests, x-rays, or ultrasound scans. These data show, for example, that 728 cases were referred at a cost of NIS2.9m for laboratory analysis; it is likely that many of these procedures could be done in health facilities in West Bank. This shows the need for much more detailed information to be able to clarify which referrals to Israeli hospitals are truly necessary.

The oncology classification can help illustrate the value of having more detailed information to clarify costs and benefits of referrals. By comparing costs between facilities, Table 3 shows the variable costs associated with the "oncological management" category; the cost variability currently cannot be explained because invoices that detail treatments and procedures are not available.

Israeli hospital	Procedure	Cases	Total cost	Average cost*
Assaf Harofeh	ONCOLOGICAL MANAGEMENT	12	137760	11480
Assuta	ONCOLOGICAL MANAGEMENT	4	38200	9550
Echelof	ONCOLOGICAL MANAGEMENT	18	299260	16626
Hadassa-Ein Karim	ONCOLOGICAL MANAGEMENT	355	13794770	38859
Hadassa Mount Scopus	ONCOLOGICAL MANAGEMENT	3	44500	14833
Karmel Haifa	ONCOLOGICAL MANAGEMENT	1	200000	200000
Maeir	ONCOLOGICAL MANAGEMENT	6	98500	16417
Rabin-Belenson	ONCOLOGICAL MANAGEMENT	1	20000	20000
Rambam	ONCOLOGICAL MANAGEMENT	28	520500	18589
Shneider	ONCOLOGICAL MANAGEMENT	2	29000	14500
Tel-Hashomer	ONCOLOGICAL MANAGEMENT	121	3398581	28087
Wolfson	ONCOLOGICAL MANAGEMENT	2	40000	20000

TABLE 3: VARIABLE COSTS OF ONCOLOGICAL MANAGEMENT IN ISRAELI HOSPITALS

* All costs are based on MOH data rather than invoiced amount.

The costliest referral procedure for the PA is for bone marrow transplantation, and cost variation between Israeli hospitals is noted for this procedure also (Table 4). While bone marrow transplantation cannot currently be managed within the Palestinian health sector, it is possible that other procedures could be. Augusta Victoria Hospital has established the infrastructure for this procedure, but it is not yet functional. Al-Najah University Hospital is also in the process of starting this service.

TABLE 4: VARIABLE COSTS OF BONE MARROW TRANSPLANTATION IN ISRAELI HOSPITALS

Israeli hospital	Procedure	Cases	Total cost	Average
Echelof	BONE MARROW TRANSPLANTATION	4	572500	143125
Hadassa-Ein Karim	BONE MARROW TRANSPLANTATION	29	7172605	247331
Maeir	BONE MARROW TRANSPLANTATION	1	160000	160000
Rambam	BONE MARROW TRANSPLANTATION	1	270000	270000
Tel-Hashomer	BONE MARROW TRANSPLANTATION	72	13762000	191139

CAPACITY OF PALESTINIAN HEALTH SYSTEM TO TAKE ON MORE REFERRALS: RAPID ASSESSMENT

Figure 6 below shows the most costly referrals to Israeli hospitals for 2013. Only bone marrow transplantation is not yet available in Palestinian hospitals. The remainder of the conditions can be managed or partly managed within the Palestinian health sector:

- Oncology
- Hematology
- Cardiology and cardiac surgery
- Neurology and neurosurgery
- General surgery
- Pediatrics

The focus for assessing the capacity of the Palestinian health sector is, therefore, on these high-cost categories of referral. The PHCP, with MOH assistance, conducted a rapid assessment of MOH and non-MOH hospitals that are used (or can potentially be used more frequently) as referral sites by the MOH. The purpose of this rapid assessment was to obtain a profile of the capacities of these hospitals in terms of services, number of beds, type of facilities, human resources, utilization, and potential for receiving referrals and improving services.





Source: MOH 2013

SCOPE

In West Bank and Gaza, secondary and tertiary hospital care is provided by MOH as well as private for-profit and not-for-profit facilities. There are 49 hospitals in West Bank and 30 in Gaza Strip with a total of 5,487 beds, 58% of which are in West Bank. The selection of hospitals participating in the rapid assessment was based on the hospital's capacity or potential for receiving tertiary referrals. A total of 35 hospitals in the West Bank met these criteria and participated. Twelve of the 35 were MOH hospitals and 23 were non-MOH hospitals that are private for-profit or nongovernmental.

METHODOLOGY

The rapid assessment used a short questionnaire that the MOH developed and administered in 2012 for a similar purpose. Using the same form allows for collecting data and comparing it with the same data collected previously in 2012, therefore providing information about changes in the capacity of hospitals in the West Bank.

A team from MOH and PHCP visited the participating hospitals, met with senior staff to explain the purpose of the assessment, and provided the hospitals with a form to complete and send back. The form was self-administered by the hospital team. The PHCP team was responsible for collecting all the forms, ensuring that the forms were completed accurately, and entering the data in a database that allowed for analysis and comparison.

Assessment Limitations

The assessment is characterized as rapid since it collected data using a short self-administered form focusing on quantitative data, such as number of beds, number of nurses, and types of services. The collected information does not address quality of services, patient perceptions or outcomes, or efficiency. The results generated by the assessment are descriptive and offer a snapshot of what is available at hospitals in the West Bank in terms of numbers, not quality.

FINDINGS

As noted above, 35 hospitals either currently take tertiary referrals or have the potential to do so in the future. Appendix 1 shows the distribution of the 35 hospitals surveyed by their location, whether the hospital currently takes referrals, and the main types of referrals it takes.

AVAILABILITY OF BEDS AND SPECIALISTS

Bed occupancy is generally high (Table 5). Our data show an average occupancy of 74.5% across all hospitals in the Palestinian health sector, although in some places occupancy is as high as 80%. Although these numbers are high, there is probably a potential for even higher occupancy. There may also be efficiencies to be gained in bed usage, such as fewer days in hospital for certain diagnosis-related groups (DRGs) coupled with better home care. Reorganizing hospital occupancy around priorities for referral could also make more bed usage time available for certain conditions. This reorganization could be linked to developing regional centers of excellence within the West Bank, where clinical expertise could be developed—and costs kept down—with high-volume specialized cases.

Type of hospital	Bed occupancy rate (%)
Governmental hospitals	80.2
Nongovernmental organization and private hospitals	68.8
Average total occupancy in the Palestinian health sector	74.5
Source: PHCP data 2014	

TABLE 5: BED OCCUPANCY IN PALESTINIAN HOSPITALS

Table 6 shows the bed availability per population, by hospital. There is a large disparity among governorates in the availability of beds. Given the high rate of bed occupancy, this could be a cause for referral outside a region if treatment is not immediately available nearer to the referring facility.

Concernation	Depulation	N	ЮН	UN	RWA	N	GOs	Priv	/ate	N	IMS		Тс	otal
Governorate	Population	Н	В	Н	В	Н	В	Н	В	Н	В	Н	В	Beds/ 10000
West Bank	2,684,066	13	1529	1	63	20	1447	17	498	0	0	51	3537	-
Jenin	292,248	1	160			1	16	1	37			3	213	6.2
Tubas	59,584	1	35									1	35	5.9
Tulkarem	173,859	1	105			2	60					3	165	8.5
Nablus	360,231	2	296			3	272	2	165			7	733	19.0
Qalqilia	103,989	1	56	1	63							2	119	11.4
Salfit	66,880	1	50									1	50	7.5
Ramallah/AlBireh	324,114	1	176			2	97	5	101			8	374	10.5
Jericho	48,716	1	54									1	54	11.1
Jerusalem	400,438					6	560	3	82			9	642	16.0
Bethlehem	202,196	2	311			4	240	2	27			8	578	27.5
Hebron	651,811	2	286			2	202	4	86			8	574	8.4
Gaza Strip	1,672,865	13	1578	0	0	14	569	0	0	3	177	30	2324	-
North Gaza	328,689	2	118			3	100			1	68	6	286	8.7
Gaza	578,874	6	804			7	299			1	44	14	1147	19.8
Deir AlBalah	242,978	1	110			1	20					2	130	5.4
Source: MOH data 2012														

TABLE 6: DISTRIBUTION OF HOSPITALS AND BEDS BY GOVERNORATE

Source: MOH data 2013.

H: Hospitals

B: Beds

In the clinical areas of interest for referral interventions, there has been an uneven expansion of services since 2012 (Table 7). Notable in Table 7 is the disparity between the changes in beds and specialists. In hematology, for example, there has been a rise in beds from 5 to 45, whereas the growth in the number of specialists has been small (from 9 to 13). In neurology and neurosurgery, the number of beds has risen from 15 to 40, but specialists have fallen from 34 to 32. These data raise the question of whether efficient workforce planning is taking place. Is there a need for incentives to be targeted to recruit and retain clinical specialists where they are most needed? (Further information on workforce needs is provided in the section on health workforce availability.)

TABLE 7: DEVELOPMENT OF HUMAN RESOURCES (SPECIALISTS) AND BEDS IN WEST BANK, 2012–2014

	2012 (M	OH data)	2014 (PH	CP survey)	Changes 2012-2014		
Procedure type	Number of beds	Number of Number of Number of Specialists		Number of specialists	Changes beds	Changes specialists	
Cardiology, cardiac surgery	66	29	72	39	6	10	
Oncology	25	8	38	21	13	13	
Hematology	5	9	45	13	40	4	
Neurosurgery, neurology	15	34	40	32	25	-2	
Pediatrics	370	105	489	117	119	12	

CARDIOLOGY CAPACITY AND COST COMPARISONS

Figure 7 shows the cardiac beds available in the West Bank and the cardiologists per bed.





Table 8 shows the volume and cost comparison between cardiac procedures referred to Israeli hospitals and those referred to the Palestinian sector, which includes hospitals in the West Bank and East Jerusalem.

	Is	raeli Hospita	ls	Palestinian Hospitals			
Procedure	No. cases	Total cost	Av. cost of procedure	No. cases	Total cost	Av. cost of procedure	
Cardiology and cardiac management	259	5,364,658	20,713	1122	15,820,443	14,100	
Pediatric cardiac surgery	229	6,069,000	26,502	219	4,366,980	19,941	
Vascular management and follow-up	187	4,546,090	24,311	682	6,307,260	9,248	
Heart surgery	82	2,975,916	36,292	142	4,818,388	33,932	
Cardiac catheterization	18	288,215	16,012	1964	17,003,823	8,658	
Coronary artery bypass grafting (CABG)	14	753,679	53,834	315	8,077,612	25,643	
Percutaneous transluminal coronary angioplasty (PTCA)+tent implantation	7	250,070	35,724	1560	22,745,993	14,581	
Totals	796	20247628		6004	79140499		

TABLE O. JELECTED ANNUAL CARDIAC FROCEDURES, ZUT	TABLE	8: 3	SELECTED	ANNUAL		PROCEDURES,	201	3
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In most cases, the number of cardiac procedures referred to Israel is small, and the marginal cost of taking these referrals within the Palestinian sector, where similar cases are already being managed, will be low (assuming for the moment that clinical indications allow this).

Cardiac coronary artery bypass grafting (CABG) is one example. CABG requires a team of experts: a cardiothoracic surgeon does the surgery with support from an anesthesiologist, heart-lung bypass machine specialist, other surgeons, and nurses. This type of surgery usually lasts 3–6 hours, depending

on the number of arteries being bypassed. There are several types of CABG, ranging from traditional open surgery to newer, less-invasive methods. Table 9 shows the variation in costs between Israeli hospitals, while Table 10 shows the costs of this procedure in the Palestinian health sector. It is noteworthy that the most expensive CABG procedure in the Palestinian sector is less expensive than the cheapest in the Israeli sector. There would, therefore, be significant savings through referring CABG within the Palestinian sector.

Israeli hospitals	Procedure	No. cases	Total cost	Average of procedure
Assuta	CABG	1	21737	21737
Echelof	CABG	3	102289	21737
Hadassa-Ein Karim	CABG	5	305177	61035.4
Rabin-Belenson	CABG	1	70000	70000
Shaare Zedek	CABG	1	75000	75000
Tel-Hashomer	CABG	3	179476	21737

TABLE 9: COSTS OF CABG IN ISRAELI HOSPITALS

TABLE 10: COSTS OF CABG WITHIN THE PALESTINIAN HEALTH SECTOR

Palestinian hospitals	Procedure	No. cases	Total cost	Average of procedure
Al-Makassed	CABG	68	1739010	25,574
Specialized Arab Hospital (Attakhasosi)	CABG	136	3675749	27,028
Al-Meazan	CABG	21	524002	24,952
Al-Ahli (Hebron)	CABG	33	686808	20,812
Nablus Specialist Hospital	CABG	57	1452043	25,474

ONCOLOGY AND HEMATOLOGY

Table 11 shows PHCP findings related to oncology and hematology. Capacity for radiotherapy treatments is found only in Augusta Victoria hospital (AVH), although chemotherapy can be administered in four locations. MOH data indicate that only 8 cases in 2013 were referred to Israeli hospitals just for radiotherapy, while 268 went to AVH. Hospital respondents did not differentiate between full-time and part-time staff.

TABLE 11	: CAPACITY	OF P ALESTINIAN	HOSPITALS FOR	ONCOLOGY AN	d Hematology,	2014
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Hospital	Beds	Chemotherapy	Oncologists	Hematologists	Radiotherapy
An-Najah	13	15	3	1	NA
Al-Watani	4	13	1	1	NA
Beit Jala	21	10	4	3	NA
Augusta Victoria	12		2+4	2	Yes

Note: 'Beds' refers to inpatient beds, while chemotherapy beds are outpatient.

Figure 8 shows the most common causes of cancer in the Palestinian sector; breast cancer ranks first. This is significant because the protocol for treatment of breast cancer requires radiation, and these patients are currently referred to Augusta Victoria Hospital. Women are not referred to Israel for diagnostic or screening mammography as this service is provided by the MOH at the primary health care level (Ministry of Health 2013).



FIGURE 8: MOST COMMON CANCER CASES AMONG PALESTINIANS, 2012

Source: Ministry of Health 2013

Three out of 35 hospitals (9%) in the Palestinian health sector have a magnetic resonance imaging (MRI) scanner, which could be used initially to identify and follow up on cancer treatment of certain types. The three hospitals are Al-Makassed in Jerusalem, Arab Care Hospital in Ramallah, and Al-Ahli Hospital in Hebron. All are private facilities.

TECHNICIAN CAPACITY

In Figure 9, the number of technicians with various expertise is shown per hospital facility. As with other health staff, distribution is variable. The data do not make it possible to estimate whether supply meets demand and need. More information is needed to answer this question and to estimate whether the current supply can meet new demands of increased referrals. There appears to be a good number and distribution of laboratory technicians, and this adds weight to the earlier speculation that there is existing capacity within the Palestinian health sector to take on blood tests and other investigations currently being referred to Israeli hospitals.



FIGURE 9: DISTRIBUTION OF TECHNICIANS IN WEST BANK AND EAST JERUSALEM HOSPITALS

Source: PHCP survey 2014

NEUROLOGY CAPACITY

In neurology, the number of specialists has fallen, though there are more beds available (Table 7). Figure 10 shows the hospitals that take neurology cases and how specialists are disbursed.





Source: PHCP Survey 2014

EMERGENCY CARE PROVISION

Beds for emergency day care are found at 24 out of 35 hospitals in the Palestinian health sector. Their distribution and number are shown in Figure 11. The Palestinian Medical Complex and Al-Makassed hospitals have the greatest availability. Trauma units do not exist in the Palestinian health sector. Emergency beds are for treating patients who present with a condition needing urgent treatment but who may not need to stay in hospital. The existence of emergency beds can relieve the burden on bed occupancy. PHCP has supported training of health workers in basic and advanced life support, organized by the MOH as an orientation for all newly recruited health workers. This is important in expanding the availability of skilled staff to deal with more complex emergencies and trauma as well as complex referrals.



FIGURE 11: EMERGENCY BED AVAILABILITY IN WEST BANK

Source: PHCP data 2014

HEALTH WORKFORCE AVAILABILITY

In recent years, much information about the health workforce has become available, although it is not yet collected in one place nor analyzed and used for planning purposes. There are great discrepancies in the various reports of health workforce numbers, whether at the Ministry level or nationwide. One cause of data variation may be the lack of coordination across the disparate bodies that collect data. A recent development has been the initiation and partial implementation of an electronic system— MENAiTech—for collecting human resources data. MENAiTech was developed regionally in Oman and implemented in the Palestinian MOH through the USAID-funded Flagship Project. It is a comprehensive system and is currently installed and used in the MOH at Ramallah and Nablus central buildings, and in the following hospitals: Al-Alia (Hebron), Bethlehem, Beitjala, Darwish Nazzal (Qalqilia), PMC (Ramallah), National (Nablus), Rafidia (Nablus), Salfit, Tulkarem, Jenin, Jericho, and Yatta. All MOH employees are now included in the system.

The PHCP assessment of health workforce availability in hospitals shows that about half of clinical health workers (51%) working in hospitals are employed by the MOH. Appendix 2 shows the distribution of health workers by type, location, and employer. The appendix compares data for government hospitals with MOH data from 2012, with the data showing consistent improvement for all cadres.

Table 12 shows the number and specialties of the resident physicians currently in training. To increase staffing to take more of the top four clinical areas of referrals urgently requires a better alignment between residency programs and staffing need, with a targeted approach to increase the numbers of specialists in a given area based on a strategic vision for addressing referral reform. For example, there are no neurology residents in training, and while neurology beds have increased, the number of specialists has fallen (see Table 7).

Specialty	Number in residency program
Oncology and hematology	3
Cardiology	4
Cardiac surgery	7
Neurology	0
Pediatrics	92
Internal medicine	81
Anesthesiology	38
General surgery	85
Urology and renal surgery	10
Emergency medicine	10
Family medicine	34
Obstetrics and gynecology	104
Ophthalmology	11
Orthopedics	49
Psychiatry	7
ENT	11
Diagnostic radiology	21
TOTAL	567

TABLE 12: CURRENT SPECIALTIES OF RESIDENT PHYSICIANS

Source: Palestine Medical Council (PMC) data 2014

Hospitals reported more resident physicians than the PMC report, the disparity being more than 100. It is not possible to identify a cause for this variation, but it does indicate the importance of MENAiTech data and of harmonizing data across the sector for more efficient planning.

Figure 12 shows the significance of the resident physician workforce as a proportion of the overall medical staff, and the potential of this cadre to strengthen the health workforce to take on more cases that are currently referred out of the country. Also notable is the small number of all specialists relative to population size. There are no absolute standards for the supply of specialist physicians per population (Starfield et al. 2005); although there are economic metrics for assessing the likely "market" for physicians in populations, these would have to be used with caution outside the US.

FIGURE 12: NUMBER OF PHYSICIANS CURRENTLY EMPLOYED IN HOSPITALS IN THE WEST BANK



Source: PHCP data 2014



FIGURE 13: NUMBER AND TYPE OF NURSES EMPLOYED IN WEST BANK HOSPITALS

Source: PHCP data 2014

Figure 13 shows the number of nurses employed in hospitals in the West Bank by their level of education. However, it is not possible to know from these data whether they are trained in specialist programs so that they can be part of a specialist team. Data of this type would be valuable for workforce planning purposes and could be available on the MENAiTech system.

Pharmaceuticals availability

Anecdotal evidence suggests that drug stockouts may be a cause of some referrals to Israeli hospitals, but this is not corroborated by the current evidence. It is difficult to gather data on this because the referral cause will be "hematology" or "oncology." Further investigation is underway by the World Health Organization (WHO).

PROMISING EARLY RESULTS

Tables 13 and 14 are based on recent data from the MOH about referrals during February and March 2014. The tables show a promising reduction in referrals to Israeli hospitals, with an almost NIS 6m reduction in costs.

			Refe	ral distrik	oution				
		West Bank			Gaza Strip)		PA	
Type of referral	Number	Cost	% of cost	Number	Cost	% of cost	Number	Cost	% of cost
Gaza	0	0	0.0%	390	734973	9.7%	390	734973	2.0%
West Bank	1751	7251776	25.7%	293	1068140	14.1%	2044	8319916	23.2%
East Jerusalem	2194	11293807	40.0%	582	2800570	36.8%	2776	14094377	39.3%
Egypt	2	440000	1.6%	149	264500	3.5%	151	704500	2.0%
Jordan	8	409500	1.4%	5	36000	0.5%	13	445500	1.2%
Israel	352	8872255	31.4%	313	2697808	35.5%	665	11570063	32.3%
PA	4307	28267338	100%	1732	7601991	100%	6039	35869329	100%

TABLE 13: REDUCTION IN COST OF REFERRALS TO ISRAELI HOSPITALS, FEBRUARY 19-MARCH 18, 2014

TABLE 14: REDUCTION IN COST OF REFERRALS TO ISRAELI HOSPITALS, JANUARY 19-FEBRUARY 18, 2014

			Refer	ral distrib	oution				
	West Ban	k		Gaza Stri	p		PA		
Type of referral	Number	Cost	% of cost	Number	Cost	% of cost	Number	Cost	% of cost
Gaza	0	0	0.0%	479	911433	7.0%	479	911433	1.9%
West Bank	2306	10159219	29.8%	351	1456620	11.2%	2657	11615839	24.7%
East Jerusalem	2422	11790836	34.6%	689	3536021	27.2%	3111	15326857	32.6%
Egypt	1	10000	0.03%	226	396600	3.0%	227	406600	0.9%
Jordan	14	253950	0.7%	3	515000	4.0%	17	768950	1.6%
Israel	468	11840625	34.8%	554	6198605	47.6%	1022	18039230	38.3%
PA	5211	34054630	100%	2302	13014279	100%	7513	47068909	100%

CONCLUSION

This report presents the findings from a rapid assessment of data related to referrals, especially to Israeli hospitals. MOH staff were closely involved in developing the survey instruments and collecting data. The MOH has identified weaknesses in the functioning of the referral process and has taken initial steps to rectify distortions by forming three regional referral committees, with changing membership, which will scrutinize all requests from their region for referral outside the MOH system. The central MOH unit and Deputy Minister have the final approval. The MOH expectation is that there will be a more objective process of giving permission for referrals.

The data show that there is strong capacity in West Bank hospitals to take on more referrals in the high volume and high cost categories. More detailed information is needed, however, to better define which elements of procedures may be done within the PA system. While there may be potential for reducing costs by keeping patient care within the West Bank, a more detailed understanding of the specific procedures and practices associated with each referral is needed.

The PHCP survey suggests that there is capacity to take on all cardiac procedures currently referred to Israeli hospitals, as well as all blood tests and other laboratory investigations. Kidney and liver transplants are now done in West Bank and East Jerusalem, and there is potential to reduce those referred to Israeli hospitals. By 2015, bone marrow transplants will be available in Augusta Victoria Hospital, East Jerusalem, and as this is the highest cost referral to Israel, there is a high possibility for cost reduction.

Ultimately, developing DRG-based contracts that are specific about price and volume that can be used in contracting with Israeli hospitals will address cost variables. The use of contracts, a better understanding of referral capacity within WB/EJ, and more efficient health workforce planning through the use of better data are all necessary to achieve greater efficiencies in the referral system.

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APPENDIX 1. DISTRIBUTION OF 35 HOSPITALS SURVEYED, BY TYPE AND LOCATION

al Name Hospital Hospital Gov Bed No Ownership Gov hem nevchiatric Governmental Hospital 180 Government Batt	Hospital Hospital Bed No Ownership Gov 180 Government Beth	Hospital Ownership Government Bath	Gov	ernate	Hospital Type Snacialized (Devchiatory)	Referal Hospital	Main Types of Referrals Bowchistric resea
them psychiatric Governmental Hospital 180 Government Bethlehem specialized (Psych	180 Government Bethlehem Specialized (Psych	Government Betnlenem Specialized (Psych	Bethlehem Specialized (Psych	Specialized (Psych	latry)	Non Kererral	Psychiatric cases
s Baby Hospital 83 NGOs Bethlehem Specialized (Pediat	83 NGOs Bethlehem Specialized (Pediat	NGOs Bethlehem Specialized (Pediat	Bethlehem Specialized (Pediat	Specialized (Pediat	rics)	NGO' referrals	Paediatrics and Neonatology
amily Hospital 63 NGOs Bethlehem Specialized (Materr	63 NGOs Bethlehem Specialized (Materr	NGOs Bethlehem Specialized (Materr	Bethlehem Specialized (Materr	Specialized (Materr	lity)	NGO' referrals	OBS& GYN and Neonatology
hem Arab Society for Rehabilitation 78 NGOs Bethlehem Rehabilitation and	78 NGOs Bethlehem Rehabilitation and	NGOs Bethlehem Rehabilitation and I	Bethlehem Rehabilitation and	Rehabilitation and J	ohysical therapy	NGO' referrals	Rehabilitation, Ophthal mology, Cochlear Implantation, ENT, Neurology
la Governmental Hospital 131 Government Bethlehem General	131 Government Bethlehem General	Government Bethlehem General	Bethlehem General	General		MOH referral	Oncology and Haematology
amah Hospital 24 Private Bethlehem General	24 Private Bethlehem General	Private Bethlehem General	Bethlehem General	General		Private Referrals	Cardiology
30 Sovernmental Hospital (Aboalhassan) 34 Government Hebron General	34 Government Hebron General	Government Hebron General	Hebron General	General		Non Referral	General Surgery, Medical
Hospital 162 NGOs Hebron General	162 NGOs Hebron General	NGOs Hebron General	Hebron General	General		NGO' referrals	Cardiology , Cardiac surgery , Urology , Catheterization , Padiatrics , Neurology, ESWL, MRI
escent Hospital- Hebron 40 NGOs Hebron Specialized (Pedia	40 NGOs Hebron Specialized (Pediat	NGOs Hebron Specialized (Pediat	Hebron Specialized (Pediat	Specialized (Pediat	trics)	NGO' referrals	Paediatrics and Neonatology, OBS & GYN
zan Hospital 50 Private Hebron General	50 Private Hebron General	Private Hebron General	Hebron General	General		Private Referrals	Cardiology ,Nerosurgery ,Urology ,Cardiac surgery, Chest
n Governmental Hospital 327 Government Hebron General	327 Government Hebron General	Government Hebron General	Hebron General	General		MOH Referral	Ophthalmology, Urology, general surgery, ENT
Governmental Hospital 160 Government Jenin General	160 Government Jenin General	Government Jenin General	Jenin General	General		Non Referral	Pediatric, Medical Management
Hospital 35 Private Jenin General	35 Private Jenin General	Private Jenin General	Jenin General	General		Private Referrals	Cardiac management, ESWL, Medical Management
o Governmental Hospital 54 Government Jericho General	54 Government Jericho General	Government Jericho General	Jericho General	General		Non Referral	General surgery, Medical, Hemodialysis
ani Governmental Hospital 81 Government Nablus Specialized(Medical	81 Government Nablus Specialized(Medical	Government Nablus Specialized(Medical	Nablus Specialized(Medica	Specialized(Medical	0	MOH Referral	Oncology & Haematology, Internal medicine
tes Hospital 48 NGOs Nablus General	48 NGOs Nablus General	NGOs Nablus General	Nablus General	General		NGO' referrals	Neurology , Vascular Surgery , Urology , paediatrics
Hospital (Arab Women's Union) 62 NGOs Nablus General	62 NGOs Nablus General	NGOs Nablus General	Nablus General	General		NGO' referrals	paediatrics , Internal Medicine
lized Nablus Surgical (Altakhsosi) 65 Private Nablus General	65 Private Nablus General	Private Nablus General	Nablus General	General		Private Referrals	Cardiac management Cardiac Surgery, Colonoscopy, Endoscopy
lized Alarabi 100 Private Nablus General	100 Private Nablus General	Private Nablus General	Nablus General	General		Private Referrals	Cardiac management ,Cardiac Surgery, Chest, Colonscopy
ah National University Hospital 162 NGOs Nablus General	162 NGOs Nablus General	NGOs Nablus General	Nablus General	General		NGO' referrals	Heamtology ,Oncology ,Nephrology ,Cardiology Neurosyrgery, Urology
a Governmental Hospital 200 Government Nablus General	200 Government Nablus General	Government Nablus General	Nablus General	General		MOH Referral	Orthopaedic, Neurology & Neurosyrgery , Paediatrics , Ophthal mology, Urology, ENT
3overnmental Hospital 50 Government Salfit General	50 Government Salfit General	Government Salfit General	Salfit General	General		Non Referral	General Surgery, Medical, Hemodialysis
a Governmental Hospital 58 Government Qalqiliah General	58 Government Qalqiliah General	Government Qalqiliah General	Qalqiliah General	General		Non Referral	General Surgery, Medical
In Eye Hospital 74 NGOs Jerusalem Specialized (Ophth	74 NGOs Jerusalem Specialized (Ophth	NGOs Jerusalem Specialized (Ophth	Jerusalem Specialized (Ophth	Specialized (Ophth	almology)	NGO' referrals	Ophthalmological Management
escent Hospital / Jerusalem 30 NGOs Jerusalem Specialized (Materi	30 NGOs Jerusalem Specialized (Materi	NGOs Jerusalem Specialized (Materi	Jerusalem Specialized (Materi	Specialized (Materi	(ty)	NGO' referrals	OBS& GYN and Neonatology
eph Hospital 73 NGOs Jerusalem General	73 NGOs Jerusalem General	NGOs Jerusalem General	Jerusalem General	General		NGO' referrals	Cardiology , Cardiac Catheterization, Nephrology & Urology , Neurosurgery, Chest
sed Hospital 250 NGOs Jerusalem General	250 NGOs Jerusalem General	NGOs Jerusalem General	Jerusalem General	General		NGO' referrals	Cardiology , Cardiac Surgery , Padiatrics ,paediatric Surgeries ,Orthopedics, Arthroscopy , ,Neurosurgery, MRI
ss Basma - Rehabilitation 15 NGOs Jerusalem Rehabilitation and	15 NGOs Jerusalem Rehabilitation and	NGOs Jerusalem Rehabilitation and	Jerusalem Rehabilitation and	Rehabilitation and	physical therapy	NGO' referrals	Rehabilitation
ta Victoria Hospital 118 NGOs Jerusalem General	118 NGOs Jerusalem General	NGOs Jerusalem General	Jerusalem General	General		NGO' referrals	Oncology , Haematology , Nephrology , Paediatrics Radiotherapy, ENT, Radiotherepy
ine Medical Complex 170 Government Ramallah General	170 Government Ramallah General	Government Ramallah General	Ramallah General	General		MOH Referral	Cardiology, Cardiac surgery, Urology, Catheterization, Padiatrics, Neourology, ENT
escent Hospital - Albereh 70 NGOs Ramallah General	70 NGOs Ramallah General	NGOs Ramallah General	Ramallah General	General		NGO' referrals	Paediatrics ,Neonatology, OBS & GYN
are Hospital 37 Private Ramallah General	37 Private Ramallah General	Private Ramallah General	Ramallah General	General		Private Referrals	Investigations, MRI
lam Hospital 67 Private Ramallah General	67 Private Ramallah General	Private Ramallah General	Ramallah General	General		Private Referrals	Ophalmological Management
m Governmental Hospital 105 Government Tulkarm General	105 Government Tulkarm General	Government Tulkarm General	Tulkarm General	General		Non Referral	General Surgery, Medical
Tulkarem Hospital 50 Private Tulkarm General	50 Private Tulkarm General	Private Tulkarm General	Tulkarm General	General		Non Referral	Pediatric, Medical Management

Source: PHCP Survey 2014

APPENDIX 2. DISTRIBUTION OF HEALTH WORKERS IN THE WEST BANK, BY FACILITY TYPE

	Hospital Name	Hospital Ownership	Area	Hospital Type	Hospital Bed No	Physicians per MoH bed	Physicians General	- Specialist	Total Physicians	Nursing	Midwife	Pharmacist	Paramedical	Admistration	Total Per Hospital
-	Bethlehem psychiatric Governmental Hospital	Government	Bethlehem	Specialized (Psychiatry)	180	0.07	10	2	12	71		1	4	44	132
2	Beit Jala Governmental Hospital	Government	Bethlehem	General	131	0.60	48	31	29	142	13	4	41	77	356
m	Yatta Governmental Hospital (Aboalhassan)	Government	Hebron	General	34	0.65	11	11	22	53	7	2	17	38	139
4	Hebron Governmental Hospital	Government	Hebron	General	327	0.24	31	47	78	204	27	8	61	91	469
S	Jenin Governmental Hospital	Government	Jenin	General	160	0.24	16	23	39	154	23	6	49	37	308
9	Jericho Governmental Hospital	Government	Jericho	General	54	0.59	16	16	32	56	6	2	15	33	144
~	Alwatani Governmental Hospital	Government	Nablus	Specialized(Medical)	81	0.26	-	20	21	74		5	20	76	196
8	Rafidya Governmental Hospital	Government	Nablus	General	200	0.29	91	58	149	182	33	9	74	123	567
6	Qalqilia Governmental Hospital	Government	Qalqiliah	General	58	0.26	18	15	33	68	e	e	22	32	161
10	Palestine Medical Complex	Government	Ramallah	General	170	1.01	105	67	172	391	28		56	122	769
1	Salfit Governmental Hospital	Government	Salfit	General	50	0.36	5	13	18	59	13	2	22	37	151
12	Tulkarm Governmental Hospital	Government	Tulkarm	General	105	0.62	43	22 6	55	111	14	6	26	68	290
	Total MoH Hospitals WB 2014 PHCP Survey				1550	0.43	395	325	720	1565	167	45 45	407	778	
	Total MoH Hospitals-WB 2012 MoH Report				1401	0.38	246	284	530	1405	137	43 43	413	877	
13	Caritas Baby Hospital	NGOs	Bethlehem	Specialized (Pediatrics)	83	0.19	8		16	83	1	2	17	52	171
14	Holy Family Hospital	NGOs	Bethlehem	Specialized (Maternity)	63	0.32	10	10	20	45	22	-	11	43	142
15	Bethlehem Arab Society for Rehabilitation	NGOs	Bethlehem	Rehabilitation and physical therapy	78	0.53	80	33	11	76		e	30	69	219
16	Alahli Hospital	NGOs	Hebron	General	162	0.50	43	38	31	192	19	3	49	143	487
17	Red Crescent Hospital- Hebron	NGOs	Hebron	Specialized (Pediatrics)	40	1.08	15	28	43	58	17	-	16	56	201
18	St. John Eye Hospital	NGOs	Jerusalem	Specialized (Ophthalmology)	74	0.27		20	20	56		-	_	56	144
19	Red Crescent Hospital / Jerusalem	NGOs	Jerusalem	Specialized (Maternity)	30	0.77	2	21 21	23	21	17	3	22	64	150
20	St. Joseph Hospital	NGOs	Jerusalem	General	73	0.32	7	52	59	78		-	17	52	207
21	Makassed Hospital	NGOs	Jerusalem	General	250	0.59	80	. 89	148	298	24	3	47	155	675
22	Princess Basma -Rehabilitation	NGOs	Jerusalem	Rehabilitation and physical therapy	15	0.00			0				11	19	33
23	Augusta Victoria Hospital	NGOs	Jerusalem	General	118	0.58	35	33 (88	130		9	27	63	294
24	St. Lukes Hospital	NGOs	Nablus	General	48	0.31	7	15	22	34	8	-	15	29	109
25	Etihad Hospital (Arab Women's Union)	NGOS	Nablus	General	62	0.42	2	26	31	54	8	-	11	47	152
26	Red Crescent Hospital - Albereh	NGOs	Ramallah	General	70	0.54	22	38	50	85	16	4	28	45	238
27	An najah National University Hospital	NGOS	Nablus	General	162	0.22	11	36 4	47	123		4	26	109	309
28	Alyamamah Hospital	Private	Bethlehem	General	24	1.71	7	41 4	48	21		1	12	21	103
29	Almeezan Hospital	Private	Hebron	General	50	0.98	11	49 (50	87	10		15	55	227
30	Alrazi Hospital	Private	Jenin	General	35	0.97	7	34 4	41	29	6	-	27	48	152
31	Specialized Nablus Surgical (Altakhsosi)	Private	Nablus	General	65	0.42		27	27	80	14	4	14	64	203
32	Specialized Alarabi	Private	Nablus	General	100	0.34	18	34	52	39	11	5	19	67	193
33	Arab Care Hospital	Private	Ramallah	General	37	1.57	4	58	52	36	7	2	15	28	150
34	Musallam Hospital	Private	Ramallah	General	67	0.58	9	39 4	45	31	4	-	12	37	130
35	Zakat Tulkarem Hospital	Private	Tulkarm	General	50	0.26	9	13	19	4	8	-	17	42	131
	Total HR WB/EJ Hospitals (PHCP Survey 2014)				3306	0.51	207	1046	1753	3288	359	94 8	366	2142	

Source: PHCP data 2014



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